

ABSTRACT OF THE DISCLOSURE

A system and method is provided for removing chamber residues from a plasma processing system in a dry cleaning process. The dry cleaning process includes introducing a process gas including a gas containing carbon and oxygen in a process chamber of the plasma processing system, generating a plasma from the process gas, exposing the chamber residue to the plasma in a dry cleaning process to form a volatile reaction product, and exhausting the reaction product from the process chamber. The plasma processing system may be monitored to determine status of the processing system, and based upon the status from the monitoring, the method includes either continuing the exposing and monitoring, or stopping the dry cleaning process. The dry cleaning process can be a waferless dry cleaning (WDC) process, or a substrate may present on the substrate holder in the process chamber during the dry cleaning process.